

I Claim:

1. A method of identifying the fossa ovalis in a patient, comprising the steps of:
 - (a) positioning one or more electrodes against the tissue of the interatrial septum of the patient;
 - (b) acquiring unipolar and/or bipolar electrograms of the tissue of the interatrial septum, while moving said electrodes to a plurality of positions against said tissue of the interatrial septum; and
 - (c) identifying the fossa ovalis on the basis of at least one of the following parameters:
 - unipolar voltage reduction
 - signal fractionation
 - broadened signal
 - reduced signal slew rate
 - reduced local myocardial impedance
 - increased phase angle and
 - increased pacing threshold.
2. The method of claim 1, wherein the fossa ovalis is also identified on the basis of bipolar voltage reduction.
3. The method of claim 1, wherein the fossa ovalis is identified on the basis at least two of the following parameters:
 - unipolar voltage reduction
 - signal fractionation
 - broadened signal
 - reduced signal slew rate
 - reduced local myocardial impedance
 - increased phase angle and
 - increased pacing threshold.
4. A method of performing a transseptal puncture on a patient, comprising the steps of:

- (a) positioning one or more electrodes against the tissue of the interatrial septum of the patient;
- (b) acquiring unipolar and/or bipolar electrograms of the tissue of the interatrial septum, while moving said electrodes to a plurality of positions against said tissue of the interatrial septum;
- (c) identifying the fossa ovalis on the basis of at least one of the following parameters:

- unipolar voltage reduction
- signal fractionation
- broadened signal
- reduced signal slew rate
- reduced local myocardial impedance
- increased phase angle and
- increased pacing threshold

and

- (d) penetrating the interatrial septum through the fossa ovalis in order to access the left atrium.

5. The method of claim 4, wherein said one or more electrodes are provided on the distal end of a catheter and said positioning step comprises positioning the distal end of said catheter against the tissue of the interatrial septum of the patient.

6. The method of claim 5, wherein said penetrating step comprises urging a needle through the interior of said catheter and through the fossa ovalis into the left atrium.

7. The method of claim 5, wherein two electrodes are provided on said catheter, one of said electrodes at the distal end of the catheter and the other of said electrodes is located on said catheter proximal to the other electrode.

8. The method of claim 5, wherein a bipolar electrogram is acquired and further comprising the step of observing ST segment elevation in the unipolar

electrogram in order to ensure that the distal end of said catheter is in contact with the tissue of the interatrial septum.

9. The method of claim 4, wherein the fossa ovalis is also identified on the basis of bipolar voltage reduction.

10. The method of claim 4, wherein the fossa ovalis is identified on the basis at least two of the following parameters:

- unipolar voltage reduction
- signal fractionation
- broadened signal
- reduced signal slew rate
- reduced local myocardial impedance
- increased phase angle and
- increased pacing threshold

11. A catheter for use in transseptal punctures, comprising:

- (a) a hollow lumen having a distal end;
- (b) a first electrode positioned at said distal end; and
- (c) a second electrode positioned on said catheter and spaced proximally from said first electrode.